

CLAIMS

We claim:

1. An expandable and contractible honeycomb panel comprising a plurality of parallel rows of elongated precursor tubular cells, each of said precursor tubular cells being constructed of a foldable and creasable material, each precursor tubular cell comprising a first strip of material having a first length;

5 a second strip of material having a second length, said second strip of material being arranged substantially parallel to said first strip of material, and said second length being substantially equal to said first length;

a carrier strip, joining said first strip and said second strip; and wherein the combination of said first strip, said second strip, and said carrier strip is shaped to form said precursor tubular cell.

2. The honeycomb panel of claim 1, wherein, for each precursor tubular cell, a first longitudinal edge of said first strip of material is touching a second longitudinal edge of said second strip of material along substantially the full length of said precursor tubular cell.

3. The honeycomb panel of claim 1 or 2, wherein said first strip of material has a first width, said second strip of material has a second width, and said carrier strip has a third width, and further wherein, for each precursor tubular cell, said third width is wider than the combination of said first width and said second width.

4. The honeycomb panel of claim 1 or 2, wherein said first strip of material has a first width, said second strip of material has a second width, and said carrier strip has a third width, and further wherein, for each precursor tubular cell, the combination of said first width and said second width is wider than said third width.

5. The honeycomb panel of claim 1 or 2, wherein said first strip of material has a first width and said second strip of material has a second width, and further wherein, for each precursor tubular cell, said second width is substantially equal to said first width.

6. The honeycomb panel of claim 3, wherein, for each precursor tubular cell, said second width is substantially equal to said first width.

7. The honeycomb panel of claim 4, wherein, for each precursor tubular cell, said second width is substantially equal to said first width.

8. The honeycomb panel of claim 1, wherein said first strip of material and said second strip of material are selected from the group consisting of polymer film, metallized fabric, nonwoven fabric, woven fabric, and knit fabric.

9. The honeycomb panel of claim 8, wherein said carrier strip is selected from the group consisting of a thermo plastic film and a polyurethane film.

10. A method of manufacturing an expandable and contractible honeycomb panel comprising a plurality of parallel rows of elongated precursor tubular cells, said precursor tubular cells being constructed of a foldable and creasable material, said method comprising the steps of

- 5 (a) placing a first strip of material substantially parallel to a second strip of material;
(b) joining said first strip and said second strip with a carrier strip;
(c) folding the combination of said first strip, said second strip, and said carrier into a precursor tubular cell with said first strip of material and said second strip of material on the exterior of said precursor tubular cell;
10 (d) repeating steps (a) through (c) to create a plurality of precursor tubular cells; and
(e) connecting said plurality of precursor cells to form said honeycomb panel.

11. The method of claim 10 wherein said joining step comprises heat lamination.

12. The method of claim 10 wherein said joining step comprises application of an adhesive.

15

~~13. The method of claim 11 or 12 wherein said carrier strip comprises a first extended portion and a second extended portion, and wherein said connecting step further comprises applying an adhesive to the exterior of said first and second extended portions to affix adjacent precursor tubular cells one to the other.~~

~~14. The method of claim 11 or 12 wherein said carrier strip is not as wide as the combination of a width of said first strip and a width of said second strip, and wherein, after said folding step, a first free edge of said precursor tubular cell is adjacent to a second free edge of said precursor tubular cell, and wherein said connecting step further comprises applying an adhesive to the exterior of said first and second free edges to affix adjacent precursor tubular cells one to the other.~~

APR 17 2015
3:35 PM
COMM-FBI